

**REMARKS**

Claims 1, 2, 4-12 and 21-23 are pending in this application. By this Amendment, claim 1 is amended to more accurately define the claimed subject matter, as supported by page 9, line 34 - page 10, line 5 and Figures 5-7 of the present specification. Claims 2, 3 and 7 are amended for antecedent basis. Claim 8 is amended to address a 35 U.S.C. §112, second paragraph rejection, and is supported by page 11, lines 30-33 of the specification. Claim 10 is amended to correct typographical errors. New claim 21 is described in the original specification at, for example, Figures 5-7. New claim 22 is described in the current specification at, for example, page 11, lines 19-21. New claim 23 is supported by original claims 1 and 3. Claim 3 is canceled. No new matter is added by this Amendment.

**I. Interview**

Applicants appreciate the courtesies shown to Applicants' representatives by Examiner Levy in the April 22, 2008, interview. Applicants' separate record of the substance of the interview is incorporated into the following remarks.

**II. Rejections Under 35 U.S.C. §112, second paragraph**

**A. Claims 1-12**

Claims 1-12 were rejected under 35 U.S.C. §112, second paragraph, as allegedly being indefinite. Applicants respectfully traverse this rejection.

The Patent Office alleges that the term "adapted" is "unspecified and indeterminate." See Office Action, page 2.

Although Applicants respectfully disagree with the Patent Office's conclusions, Applicants have amended claim 1 to recite that the blade portions are integrally formed with annular hollow structure so as to extend from positions adjacent to the openings in the inner peripheral surface toward the center thereof and forming a singular unit with the annular hollow structure to promote the flow of air from the inner peripheral surface to the outer peripheral

surface of the annular hollow structure. The claim language thus defines that the blade portions are integral with and thereby form a single unit with the annular hollow structure.

Reconsideration and withdrawal of the rejection are respectfully requested.

**B. Claim 8**

Claim 8 was rejected under 35 U.S.C. §112, second paragraph, as allegedly being indefinite. Applicants respectfully traverse this rejection.

The Patent Office alleges that is unclear how the cartridge void ratio would depend upon the materials within the hollow structure. See Office Action, page 2.

Although Applicants respectfully disagree with the Patent Office's conclusions, Applicants have amended claim 8 to recite that the chemical-impregnated materials are housed in the cartridge for insecticide transpiration with a free volume of 20% to 70%, as supported by page 11, lines 30-33 of the specification. As such, the Patent Office's rejection is moot. Reconsideration and withdrawal of the rejection are respectfully requested.

**C. Conclusion**

In view of the foregoing amendments, Applicants request reconsideration and withdrawal of the rejections.

**III. Rejection Under 35 U.S.C. §102(b)**

Claims 1, 2, 4, 7-9, 11 and 12 were rejected under 35 U.S.C. §102(b) as allegedly being anticipated by EP 0 962 139 ("Ishiwatari"). Applicants respectfully traverse this rejection.

As amended, claim 1 recites a cartridge for insecticide transpiration comprising an annular hollow structure which has openings in an inner peripheral surface and an outer peripheral surface thereof. However, Ishiwatari discloses a pest control device with a cylindrical vertical housing 21. See Ishiwatari, paragraph [0040] and Figure 3. As such, Ishiwatari does not disclose the annular hollow structure and thus does not anticipate present claim 1.

Furthermore, claim 1 recites that the cartridge for insecticide transpiration has blade portions integrally formed with the annular hollow structure so as to extend from positions adjacent to the openings in the inner peripheral surface toward the center thereof and which blade portions form a singular unit with the annular hollow structure to promote the flow of air from the inner peripheral surface to the outer peripheral surface of the annular hollow structure. In contrast, Ishiwatari discloses that the blades 32 are attached to the vertical shaft 26 and the cylindrical vertical housing is attached to the partition 23. See Ishiwatari, paragraphs [0040] and [0041] and Figure 3. As such, Ishiwatari also does not disclose integrally forming the blades and the annular hollow structure, and thus does not anticipate present claim 1 for this additional reason.

In view of foregoing amendments and arguments, Ishiwatari does not anticipate the subject matter of present claim 1. Reconsideration and withdrawal of the rejection are respectfully requested.

**IV. Rejection Under 35 U.S.C. §103(a)**

Claims 1-12 were rejected under 35 U.S.C. §103(a) as allegedly being obvious over Ishiwatari in view of JP 2001-0247406 ("Inoue '406"). Applicants respectfully traverse this rejection.

The Patent Office admits that Ishiwatari does not disclose the opening slits of claim 3, and turned to Inoue '406 as allegedly disclosing this feature. See Office Action, page 3. Applicants respectfully disagree.

Ishiwatari or Inoue '406 do not describe the cartridge of claim 1. First, as stated above, Ishiwatari discloses that the blades 32 are attached to the vertical shaft 26 and the cylindrical vertical housing is attached to the partition 23. See Ishiwatari, paragraphs [0040] and [0041] and Figure 3. As Ishiwatari does not disclose integrally forming the blades to the annular hollow structure as required by claim 1, the mere inclusion of openings in the Ishiwatari structure would

not have led one of ordinary skill in the art to the different cartridge of claim 1 with any reasonable expectation of success.

Second, neither Ishiwatari nor Inoue '406 describe (1) that a blade portion is formed integrally with the annular hollow structure at the inner peripheral surface between each of the multitude of opening slits (claim 21) or (2) that the annular hollow structure houses granular chemical-impregnated material, containing at least one insecticidal chemical, having an average outer diameter of 3 mm to 10 mm that is 1.3 times larger than the dimension of an opening of the multitude of slit openings (claim 22).

Moreover, neither Ishiwatari nor Inoue '406 describe that the openings in the inner peripheral surface and an outer peripheral surface consist of a multitude of opening slits formed in parallel. As discussed during the interview, this parallel configuration, illustrated in Figures 5-7, promotes the flow of air from the inner peripheral surface to the outer peripheral surface of the annular hollow structure.

Finally, Inoue '406 also does not disclose integrally forming the blades to the annular hollow structure. Figure 4 of Inoue '406 illustrates that the blades 13 (referenced in Inoue '406 as "vanes") are attached to the sirocco fan 12. Moreover, Figure 6a of Inoue '406 illustrates a cartridge 2 and a drug impregnation body 1, while Figure 6b of Inoue '406 further illustrate the blade/fan assembly of Figure 4. As such, Figures 6a and 6b illustrate that the blade/fan assembly is placed within, and is not integrally formed to, the drug impregnation body 1.

As explained during the interview, this design is problematic for several reasons. First, because the blade/fan assembly is not integrally formed with the drug impregnation body 1, the position between cartridge 2 and fan 12 must be regulated. Second, as the fan 12 rotates, the blades 13 of the fan 12 disrupt the flow of air as the blades 13 pass by the solid portions between the openings of cartridge 2. This is in contrast to the cartridge of claim 1 wherein the blade portions are formed integrally with the annular hollow structure such that the blade portions do

not pass by the solid portions between the openings of the annular hollow body during rotation. As Ishiwatari and Inoue '406 do not describe these features, neither would have provided one of ordinary skill in the art with any reason or rationale to have modified Ishiwatari in a manner that would have achieved the cartridge of claim 1.

Furthermore, the inclusion of an annular hollow structure where the blades are integrally formed to the annular hollow structure so as to form a single unit, as recited in claim 1, unexpectedly improves the transpiring amount and insecticidal effect. These unexpected results are demonstrated in the present application.

Example 1 of the present specification is an insecticide transpiration device comprised of an annular hollow structure with an outer peripheral surface and an inner peripheral surface, wherein the outer peripheral surface has 40 slits and the inner peripheral surface has 24 slits and 24 blades between the slits. See page 25, lines 6-14 of the specification. Moreover, the annular insecticide transpiration device of Example 1 is a singular unit as 5 mm blades are integrally formed to the annular hollow structure. See page 24, lines 32-33 of the specification.

Comparative Example 1 of the present specification, which is similar to the insecticide transpiration device of Inoue '406, is an insecticide transpiration device comprised of the same annular hollow structure of Example 1, but with an annular support portion that limits the blade length to 4 mm. See page 7, lines 1-7 and page 26, lines 4-5 and 13-15 of the specification. Moreover, the insecticide transpiration device of Comparative Example 1 is not integrally formed to the annular hollow structure. See page 26, lines 1-3 of the specification.

After insertion of the insecticide-impregnation materials and the insecticide cartridges, the transpiring amount and insecticidal effect were measured for in Example 1 and Comparative Example 1 on the first, fifteenth and thirtieth days, while using the device for twelve hours a day. See page 26, lines 17-25 of the specification. These results, illustrated in Table 1, are reproduced below for convenience.

**Table 1: Transpiring Amount and Insecticidal Effect for Example 1**

Chemical Name	Free Volume (%)	Rotational Speed of Motor (rpm)		Transpiring Amount (mg/12 hours)			Insecticidal Effect		
				1 day	15 days	30 days	1 day	15 days	30 days
Compound A	40	1800	Ex. 1	7.1	7.1	6.9	3.9	3.8	3.8
			Comp. Ex. 1	6.3	6.2	6.2	3.4	3.3	3.3
Compound B	20	2000	Ex. 1	5.8	5.7	5.7	2.8	2.7	2.7
			Comp. Ex. 1	5.3	5.1	5.1	2.2	2.1	2.0
Compound C	50	1300	Ex. 1	2.7	2.6	2.5	2.3	2.2	2.2
			Comp. Ex. 1	2.1	1.9	1.9	1.8	1.7	1.6
Compound D	65	1100	Ex. 1	3.9	3.8	3.7	3.2	3.2	3.1
			Comp. Ex. 1	3.3	3.2	3.1	2.8	2.7	2.6
Compound E	25	1400	Ex. 1	3.7	3.7	3.6	2.9	2.8	2.8
			Comp. Ex. 1	3.2	3.1	3.1	2.4	2.3	2.3
Compound F	70	200	Ex. 1	1.2	1.0	1.0	2.6	2.5	2.5
			Comp. Ex. 1	0.6	0.5	0.3	1.9	1.7	1.5
Compound G	35	1200	Ex. 1	2.1	2.0	2.0	3.4	3.4	3.4
			Comp. Ex. 1	1.5	1.4	1.3	2.9	2.8	2.8
Compound H	40	500	Ex. 1	1.3	1.3	1.2	2.4	2.3	2.3
			Comp. Ex. 1	0.7	0.6	0.6	1.9	1.7	1.7
Compound I	30	1100	Ex. 1	3.3	3.2	3.2	3.0	2.9	2.9
			Comp. Ex. 1	2.9	2.7	2.6	2.6	2.5	2.4
Compound J	30	1200	Ex. 1	4.5	4.4	4.4	2.9	2.8	2.8
			Comp. Ex. 1	4.0	3.8	3.7	2.5	2.4	2.4
Compound K	30	1300	Ex. 1	4.4	4.3	4.2	2.8	2.7	2.7
			Comp. Ex. 1	4.0	3.8	3.7	2.3	2.2	2.1

As shown by the results above in Table 1, an insecticide transpiration device (i.e., Example 1) comprised of an annular hollow structure where the blades are integrally formed to the annular hollow structure so as to form a single unit, as recited in claim 1, unexpectedly improves the transpiring amount and the insecticidal effect, when compared to an insecticide

transpiration device where the blades are not integrally formed to the annular hollow structure. In view of the above unexpected difference, Inoue '406 would not have provided one of ordinary skill in the art with any reason or rationale to have selected an insecticide transpiration device comprised of an annular hollow structure where the blades were integrally formed to the annular hollow structure so as to form a single unit to improve the transpiring amount and the insecticidal effect of an insecticide transpiration device for this additional reason.

As such, the disclosures of Ishiwatari and Inoue '406 would not have provided one of ordinary skill in the art with a reason or rationale to have achieved the cartridge recited in claim 1 or dependent claims thereof.

During the interview, Examiner Levy suggested including the subject matter of claim 3 into the subject matter of claim 1. Applicants thus present new claim 23 for consideration by Examiner Levy. For all of the foregoing reasons described above, claim 23 is also allowable over Ishiwatari in view of Inoue '406.

Reconsideration and withdrawal of the rejection are respectfully requested.

**V. Double Patenting**

Claims 1-12 were provisionally rejected under the judicially created doctrine of obviousness-type double patenting as allegedly being unpatentable over claims 5, 6, 14 and 15 of U.S. Patent No. 6,926,902 ("Inoue '902"). Applicants respectfully traverse this rejection.

The Patent Office admits claims 1-12 are not identical to claims 5, 6, 14 and 15 of Inoue '902, but alleges that the present claims are not patentably distinct from claims 5, 6, 14 and 15 of Inoue '902. Applicants respectfully disagree.

Claim 5 of Inoue '902 recites that the insecticide cartridge is rotatably supported in the recipient. However, Applicants have amended claim 1 to recite that the blade portions are integrally formed with annular hollow structure so as to extend from the inner peripheral surface toward the center thereof and thus form a singular unit with the annular hollow structure so as to

promote the flow of air from the inner peripheral surface to the outer peripheral surface of the annular hollow structure. As such, Inoue '902 does not describe the formation of a singular unit, wherein rotatable support from the recipient in Inoue '902 is not required.

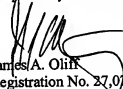
Reconsideration and withdrawal of the obviousness-type double patenting rejection are thus respectfully requested.

**VI. Conclusion**

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1, 2, 4-12 and 21-23 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



James A. Oliff  
Registration No. 27,075

Joel S. Armstrong  
Registration No. 36,430

JAO:JSA/jdt

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**OLIFF & BERRIDGE, PLC**  
**P.O. Box 19928**  
**Alexandria, Virginia 22320**  
**Telephone: (703) 836-6400**

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